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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,264	06/05/2001	Toru Uchida	010726	6047
23850	7590	11/18/2003	EXAMINER	
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			BAUMEISTER, BRADLEY W	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/873,264

Applicant(s)
Uchida et al.

Examiner
B. William Baumeister

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2815



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Aug 25, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above, claim(s) 16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

Claim Objections

1. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Independent claim 1 has been amended to recite that the strain is greater than 0.25%, but claim 2 still recites that the strain may be as low as 0.2%. As such, claim 2 does not further limit--but rather broadens--claim 1.

Claim Rejections - 35 USC § 102 and § 103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-15 and 18-20 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Svilans '200.

a. Svilans discloses photodetectors with an active layer having alternating compressive-strained and tensile strained InGaAs layers arranged so that the total effective strain of the active region is balanced and capable of operating in a wide wavelength range, covering a wide range of temperatures (e.g., ABSTRACT).

i. Note, for example, the embodiment of FIGs 1 and 2 wherein the active layer 16 comprises 15 cycles (col 4, lines 45-) of 80-nm, 0.25%-compressive-strained In_{0.57}Ga_{0.43}As layers and 20 nm, 1.03%-tensile-strained In_{0.385}Ga_{0.615}As layers formed on an n-doped InP substrate 12 (col. 4, line 44). The strains and thicknesses satisfy the equation that is set forth in various claims such as claim 4.

ii. Regarding claims 11-15, FIGs 7a-c depict the associated discussion set forth at col. 8 relating to the optional use of step-grading or continuous grading layers between the first and second layers.

b. Applicant has amended claim 1 to recite that the first semiconductor layer has a strain magnitude *exceeding* 0.25%, in order to distinguish over Svilans' specific example of 0.25%, itself. Similarly, newly presented claim 18 recites that the thickness of the first and second layers is *less than* 1.5 μ m, to distinguish over Svilans' specific example of 1.5 μ m; and claims 19

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and 20 respectively recite that the thickness of the first layer is *less than* or *greater than* 80 nm, as opposed to being equal to 80 nm, itself. Restated, Applicant's claims respectively set forth strain and thickness ranges that have endpoints which are intended to approach very closely, but expressly exclude, the specific strain and thickness values set forth in the Svilans example. Since the legal precedence is unclear as to whether, under this fact pattern, Svilans constitutes a 102 anticipation of the claims or alternatively renders the claim obvious under 35 USC 103 (see e.g. *Ex Parte Lee*, 31 USPQ2d 1105 (BdPatApp&Int, 1993), the rejection is set out in the alternative for the reasons appearing below:

- i. The claims are rejected as anticipated under the theory that because the open-ended endpoints of claimed ranges may approach infinitely close to the strain and thickness values of Svilans, the claims effectively still recite a structure that reads on the example of Svilans-or at least within any chosen minimal design tolerance thereof.
- ii. The claims are alternatively rejected as obvious under the theory that even if not constituting an overlapping range, the claims' ranges are close enough to the values taught by Svilans that one skilled in the art would have expected them to have the same properties. *See, In re Peterson*, 65 USPQ2d 1379, 1382 (CAFC 2003), *citing Titanium Metals Corp. V. Banner*, 227 USPQ 773, 779 (Fed. Cir, 1985). This closeness and expectation of same properties is evidenced, for example, by the fact that claims 19 and 20 approach Svilans's recited 80-nm thickness from both below and above, respectively.

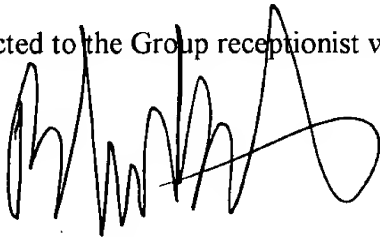
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Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are not persuasive for the reasons set forth hereinabove.

INFORMATION ON HOW TO CONTACT THE USPTO

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, **B. William Baumeister**, at **(703) 306-9165**. The examiner can normally be reached Monday through Friday, 8:30 a.m. to 5:00 p.m. If the Examiner is not available, the Examiner's supervisor, Mr. Tom Thomas, can be reached at (703) 308-2772. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



B. William Baumeister

Primary Examiner, Art Unit 2815

November 14, 2003

BRADLEY BAUMEISTER
PRIMARY EXAMINER